

09/787741

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
REQUEST FOR FILING NATIONAL PHASE OF
PCT APPLICATION UNDER 35 U.S.C. 371 AND 37 CFR 1.494 OR 1.495

To: Hon. Commissioner of Patents
 Washington, D.C. 20231



00909

TRANSMITTAL LETTER TO THE UNITED STATES
 DESIGNATED/ELECTED OFFICE (DO/E/O) (US)

Atty Dkt: P 279234 /114188-3/DV/MB
M# /Client Ref.

From: Pillsbury Winthrop LLP, IP Group:

Date: March 22, 2001

This is a **REQUEST** for **FILING** a PCT/USA National Phase Application based on:

1. International Application <u>PCT/CH98/00407</u> ↑ country code	2. International Filing Date <u>22</u> <u>September</u> <u>1998</u> Day MONTH Year	3. Earliest Priority Date Claimed <u>22</u> <u>September</u> <u>1998</u> Day MONTH Year (use item 2 if no earlier priority)
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4. Measured from the earliest priority date in item 3, this PCT/USA National Phase Application Request is being filed within:

(a) ☐ 20 months from above item 3 date (b) ☒ 30 months from above item 3 date,

(c) Therefore, the due date (unextendable) is March 22, 2001

Title of Invention MESSAGE EXCHANGE AND METHOD FOR DISSEMINATING MESSAGES IN TELEPHONE NETWORKS

6. Inventor(s) MESSMER, Bruno

Applicant herewith submits the following under 35 U.S.C. 371 to effect filing:

7. ☒ Please immediately start national examination procedures (35 U.S.C. 371 (f)).

8. ☐ A copy of the International Application as filed (35 U.S.C. 371(c)(2)) is transmitted herewith (file if in English but, if in foreign language, file only if not transmitted to PTO by the International Bureau) including:

- a. ☐ Request;
 b. ☐ Abstract;
 c. _____ pgs. Spec. and Claims;
 d. _____ sheet(s) Drawing which are ☐ informal ☐ formal of size ☐ A4 ☐ 11"

9. ☒ A copy of the International Application has been transmitted by the International Bureau.

10. A translation of the International Application into English (35 U.S.C. 371(c)(2))

- a. ☒ is transmitted herewith including: (1) ☒ Request; (2) ☒ Abstract;
 (3) 16 pgs. Spec. and Claims;
 (4) 2 sheet(s) Drawing which are:
☐ informal ☒ formal of size ☒ A4 ☐ 11"
- b. ☐ is not required, as the application was filed in English.
 c. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.
 d. ☒ Translation verification attached (not required now).

11. ☒ **PLEASE AMEND** the specification before its first line by inserting as a separate paragraph:
a. ☒ --This application is the national phase of international application PCT/CH98/00407
filed September 22, 1998 which designated the U.S.--
b. ☐ --This application also claims the benefit of U.S. Provisional Application No.
60/_____, filed _____--
12. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., **before 18th month from first priority date above in item 3, are transmitted herewith (file only if in English) including:**
13. ☒ PCT Article 19 claim amendments (if any) have been transmitted by the International Bureau
14. ☒ Translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., of **claim amendments** made before 18th month, **is attached (required by 20th month from the date in item 3 if box 4(a) above is X'd, or 30th month if box 4(b) is X'd, or else amendments will be considered canceled).**
15. **A declaration of the inventor** (35 U.S.C. 371(c)(4))
a. ☒ is submitted herewith ☒ Original ☐ Facsimile/Copy
b. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.
16. **An International Search Report (ISR):**
a. Was prepared by ☒ European Patent Office ☐ Japanese Patent Office ☐ Other
b. ☒ has been transmitted by the international Bureau to PTO.
c. ☒ copy herewith (2 pg(s).) ☒ plus Annex of family members (1 pg(s).).
17. **International Preliminary Examination Report (IPER):**
a. ☒ has been transmitted (if this letter is filed after 28 months from date in item 3) in English by the International Bureau with Annexes (if any) in original language.
b. ☐ copy herewith in English.
c.1 ☒ IPER Annex(es) in original language ("Annexes" are amendments made to claims/spec/drawings during Examination) including attached amended:
c.2 ☒ Specification/claim pages #13 - 16 claims #1 - 18
Dwg Sheets #
d. ☒ Translation of Annex(es) to IPER **(required by 30th month due date, or else annexed amendments will be considered canceled).**
18. **Information Disclosure Statement** including:
a. ☐ Attached Form PTO-1449 listing documents
b. ☐ Attached copies of documents listed on Form PTO-1449
c. ☒ A concise explanation of relevance of ISR references is given in the ISR.
19. ☒ **Assignment** document and Cover Sheet for recording are attached. Please mail the recorded assignment document back to the person whose signature, name and address appear at the end of this letter.
20. ☐ Copy of Power to IA agent.
21. ☐ **Drawings** (complete only if 8d or 10a(4) not completed): ____ sheet(s) per set: ☐ 1 set informal;
☐ Formal of size ☐ A4 ☐ 11"
22. Small Entity Status ☐ is **Not** claimed ☐ is claimed (**pre-filing confirmation required**)
22(a) ____ (No.) Small Entity Statement(s) enclosed (since 9/8/00 Small Entity Statements(s) not essential to make claim)
23. **Priority** is hereby claimed under 35 U.S.C. 119/365 based on the priority claim and the certified copy, both filed in the International Application during the international stage based on the filing in (country) Switzerland of:
- | | Application No. | Filing Date | | Application No. | Filing Date |
|-----|-----------------|----------------|-----|-----------------|-------------|
| (1) | PCT/CH98/00407 | Sept. 22, 1998 | (2) | | |
| (3) | | | (4) | | |
| (5) | | | (6) | | |
- a. ☒ See Form PCT/IB/304 sent to US/DO with copy of priority documents. If copy has not been received, please proceed promptly to obtain same from the IB.
b. ☐ Copy of Form PCT/IB/304 attached.

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RE: USA National Filing of PCT/GH98/00407

24. Attached:

25. Preliminary Amendment: See attached

25.5 Per Item 17.c2, cancel original pages #____, claims #____, Drawing Sheets #

26. **Calculation of the U.S. National Fee (35 U.S.C. 371 (c)(1)) and other fees is as follows:**

Based on amended claim(s) per above item(s) ☐ 12, ☐ 14, ☒ 17, ☐ 25, ☐ 25.5 (hilitte)

Total Effective Claims	20	minus 20 =	0	x \$18/\$9	=	\$0	966/967
Independent Claims	2	minus 3 =	0	x \$80/\$40	=	\$0	964/965
If any proper (ignore improper) Multiple Dependent claim is present,				add\$270/\$135	+270		968/969

BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(4)): →→ BASIC FEE REQUIRED, NOW →→→→

A. If country code letters in item 1 are not "US", "BR", "BB", "TT", "MX", "IL", "NZ", "IN" or "ZA"

See item 16 re:

1. Search Report was <u>not</u> prepared by EPO or JPO -----	add\$1000/\$500	960/961
2. Search Report was prepared by EPO or JPO -----	add\$860/\$430 +860	970/971

SKIP B, C, D AND E UNLESS country code letters in item 1 are "US", "BR", "BB", "TT", "MX", "IL", "NZ", "IN" or "ZA"

(X) → <input type="checkbox"/> B. If <u>USPTO</u> did not issue <u>both</u> International Search Report (ISR) <u>and</u> (if box 4(b) above is X'd) the International Examination Report (IPER), -----	add\$970/\$485	+0	960/961
(only) (one) → <input type="checkbox"/> C. If <u>USPTO</u> issued ISR but not IPER (or box 4(a) above is X'd), -----	add\$710/\$355	+0	958/959
(these) (4) → <input type="checkbox"/> D. If <u>USPTO</u> issued IPER but IPER Sec. V boxes <u>not all</u> 3 YES, -----	add\$690/\$345	+0	956/957
(boxes) → <input type="checkbox"/> E. If international preliminary examination fee was paid to <u>USPTO</u> and Rules 492(a)(4) and 496(b) <u>satisfied</u> (IPER Sec. V <u>all</u> 3 boxes YES for <u>all</u> claims), -----	add \$100/\$50	+0	962/963

27. SUBTOTAL = \$1130

28. If Assignment box 19 above is X'd, add Assignment Recording fee of ----\$40 +40 (581)

29. Attached is a check to cover the ----- TOTAL FEES \$1170

Our Deposit Account No. 03-3975

Our Order No. 60237 C# 279234 M#



00909

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 and 492 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order Nos. shown above for which purpose a duplicate copy of this sheet is attached.

This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filed

Pillsbury Winthrop LLP
Intellectual Property Group

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Atty/Sec: DSL/mhn

NOTE: File in duplicate with 2 postcard receipts (PAT-103) & attachments.

IN THE UNITED STATES PATENT OFFICE

09/787741

In re PATENT APPLICATION of

MESSMER, Bruno

Filed: HERewith

(National Phase based on PCT/CH98/00407)

Title: MESSAGE EXCHANGE AND METHOD FOR DISSEMINATING
MESSAGES IN TELEPHONE NETWORKS

March 22, 2001

PRELIMINARY AMENDMENT

Please amend this application as follows:

IN THE SPECIFICATION

Page 1, just under the title, insert the following
paragraph =

This application is the national phase of
international application PCT/CH98/00407 filed
September 22, 1999 which designated the U.S. and
that application was published under PCT Article
21(2) in English - -

09/787741

REMARKS

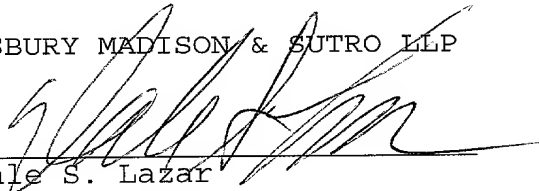
This amendment is made only to enter above paragraph.

No Appendix is deemed necessary.

Respectfully submitted,

PILLSBURY MADISON & SUTRO LLP

By


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Message Exchange and Method for Disseminating Messages in Telephone Networks

The present invention relates to a message exchange and a method for disseminating messages in telephone networks. In particular it relates to a message exchange and a method for receiving and storing spoken messages and for transmitting these messages to one or more subscribers, to whom the messages are addressed, in the public switched telephone network.

The patent document EP 0 377 379 A1 describes an automatic telephone call device, which makes it possible to store messages and associated transmission profiles with the number of the addressee, date and point in time of the first message transmission, frequency of further transmission attempts as well as date and point in time of the last transmission attempt, the messages and transmission profiles being able to be entered from a distance via a telephone connection. If a plurality of users want to avail of the services of a telephone call device described in EP 0 377 379 A1, they must have at their disposal a device of their own connected to the public switched telephone network since the telephone call device described in EP 0 377 379 A1 is not suitable for a plurality of users. Moreover the telephone call device described in EP 0 377 379 A1 does not make it possible for a user to transmit a message to a plurality of addressees.

Described in the patent document 0 177 405 A1 is a radio telephone system for automobiles, which can be controlled by the user via a speech recognition module. In particular, messages can also be prepared, stored and transmitted, using stored telephone numbers, with the voice-controlled system described. The radio telephone system described in EP 0 177 405 is also designed for just one user, and does not allow the user to transmit a message to a plurality of addressees.

The patent U.S. 4,856,066 describes an electronic system and a method for preparing, storing and transmitting messages by means of spoken language. In particular, the patent U.S. 4,856,066 describes the possibility of determining one or more addressees (groups) by means of spoken input. Routing instructions or switching commands are obtained through analysis of entered commands word-wise or by querying stored information on the basis of spoken commands. Stored messages can be transmitted at predetermined points in time, also given orally. As in the documents described above, the patent U.S. 4,856 066 also describes a system, and respectively a method, which are not designed for a plurality of users.

The patent U.S. 5,146,487 describes a method which permits a user of a telephone apparatus to prepare a message and to determine an addressee associated therewith, and to have the message transmitted to this addressee by pressing corresponding input keys under menu control. The method described in the patent U.S. 5,146,487 is not designed to transmit a message to a plurality of addressees. Although the method described in U.S. 5,146,487 is suitable for receiving and storing messages from a plurality of users, no direct reply can be transmitted to the writer of a message.

It is an object of this invention to propose a new device and a new method for receiving, storing and transmitting spoken messages in telephone networks which in particular make it possible to receive messages from a plurality of subscribers of a public switched telephone network.

This object is achieved, according to the present invention, through the elements of the characterizing portion of the independent claims. Further preferred embodiments follow moreover from the dependent claims and from the description.

In particular, these objects are achieved by means of the invention in that the device is a message exchange which is connected to the public switched telephone network, and in that this message exchange comprises a receiving module which can receive spoken messages from a plurality of subscribers in the said telephone network via this said telephone network, and which stores a received message in each case together with an automatically determined identification, for example the call number, of the subscriber who has placed the message, and in that this message exchange comprises a transmission module which can transmit stored messages to the respective subscribers by means of automatic call. Such a message exchange has the advantage that the subscribers in the telephone network do not need any special, personal terminals to store messages and to transmit them to one or more subscribers in the telephone network. Moreover a message transmitted to such a message exchange and stored there can be clearly assigned to the transmitting subscriber, so that, for example, results about the outcome of the message transmission and/or replies of the receiving subscriber can be transmitted to this transmitting subscriber.

The message exchange preferably comprises an address module in order to store a plurality of lists with subscriber identifications, these lists being assigned in each case to at least one subscriber in the said telephone network

and being able to be administered by this subscriber with services of the address module. In an embodiment variant, these lists can also contain access rights so that, for example, access to a certain list can be permitted for all subscribers who are entered in the respective list.

5 In different embodiment variants, a subscriber identification in the said list comprises the name and/or call number of a subscriber. Moreover, in the said address module, at least certain subscriber identifications in a said list of a subscriber are preferably combined into a group to which messages can be addressed. In a variant, at least certain of the subscriber identifications are
10 stored as voice signals.

In a preferred embodiment, the message exchange comprises a speech recognition module so that subscribers can address messages to subscribers and/or groups of subscribers by designating the respective subscribers or groups of subscribers by means of spoken speech and transmitting them *<sic. the designations>* to the message exchange, the speech recognition module
15 identifying in the said list of the respective subscriber the subscribers and/or groups of subscribers designated by the subscriber. In an embodiment variant, this speech recognition module makes it possible, moreover, for subscribers to create and administer the said lists by means of spoken language.

20 In different embodiment variants, the message exchange comprises at least one tariff table and/or one table with statistical information about the traffic load in the said telephone network, the transmission module of the message exchange being able to transmit messages to the addressed subscribers at times having economical tariffs or at times of low traffic load.

25 The transmission module of the message exchange preferably stores status information relating to the transmission of messages to subscribers, and can transmit unsuccessfully transmitted messages repeatedly.

The message exchange preferably comprises a reply module, which receives replies of a subscriber, to whom messages were transmitted, and can
30 store them for the respective subscriber who transmitted the message. In a preferred embodiment variant, the said reply module can receive, store and transmit to the addressed subscribers messages, which can be addressed to a group of subscribers, as reply from a subscriber to whom messages were transmitted.

In an embodiment variant, at least certain messages are transmitted via the Internet, a corresponding gateway being switched in each case between the public switched telephone network and the Internet.

An embodiment of the present invention will be described in the following with reference to an example. The example of the embodiment is illustrated by the following attached figures:

Figure 1 shows a block diagram that illustrates schematically the structure of a message exchange which is connected to the public switched telephone network.

Figure 2 shows a flow chart, which depicts the execution of a message transmission in a simplified way.

The reference numeral 2 in Figure 1 refers to the public switched telephone network, to which a plurality of terminals 21-24 are connected, these terminals 21-24 also representing the respective subscribers 21-24 in the public switched telephone network 2.

The reference numeral 1 refers to an embodiment example of the message exchange according to the invention, which is connected to the public switched telephone network 2. The message exchange 1 comprises a plurality of modules, which we shall go into in more detail later, on at least one server, for example a commercially available server having the necessary means to be connected to the public switched telephone network 2, or a commercially available telephone switching center.

The message exchange 1 comprises a receiving module 3, which is a software module, i.e. a computer program, which is installed on the server of the message exchange 1 and which has a memory area 31 assigned to it, for example on one or more hard disk memories which are located on the server or in a drive connected to this server. A subscriber 21, who would like to have a spoken message transmitted to one or more other subscribers 22-24 in the public switched telephone network, calls, for example, the service number of the message exchange 1. The receiving module 3 of the message exchange 1 receives the call through conventional communications services, and determines automatically the identification of the calling subscriber 21, for example the call number. Afterwards the receiving module 31 guides the calling participant 21 through the receiving procedure by means of spoken instructions, a spoken message and the identification of one or more subscribers to whom the message is supposed to be transmitted are thereby queried from the subscriber 21 and

received. The receiving module 3 stores the message M, for example in digital form, the automatically determined identification S of the transmitting subscriber 21, for example his call number, as well as the identifications of the subscribers to whom the message is addressed, i.e. the addressees A of the message to be transmitted, in the table 31, which is schematically illustrated in Figure 1. As indicated in Figure 1, the table 31 can also store other data elements, which are entered by the transmitting subscriber 21, for example a date and/or an indication of time when or before when the message is supposed to be transmitted to the addressees. In Figure 1 the table 31 has in addition a status field T, which we shall describe later.

There are different possible embodiment variants for the entering and storing of the identification of the subscribers to whom the message is addressed. In a first variant, by means of the dial keys of his terminal, for example a telephone, the transmitting subscriber can determine an addressee by entering the call number of the addressee. This call number can then be received by the receiving module 3, checked, and stored in the table 31. This variant has the advantage that it is simple to implement, but has, however, the disadvantage that its use is inconvenient for the transmitting subscriber above all when this transmitting subscriber wishes to transmit the message to a plurality of subscribers.

In a second variant, the addressee is determined by the transmitting subscriber by entering the name by means of the selection keys of his terminal or an identification number of a subscriber or a group of subscribers by means of selection keys of his terminal. In this variant, the typed-in name or the identification number is received by the receiving module 3 and compared, for example, with the entries in a personal list 41 of the transmitting subscriber 21, the administration of which we shall go into later. As can be learned from the table 41, illustrated schematically in Figure 1, the value of the entered group G=g1 corresponds, for example, to two subscribers with the names N=n1 and N=n2, or respectively their call numbers R=r1 and R=r2, or the value of the entered name N=n3 corresponds to the call number R=r3. The receiving module 3 can correspondingly enter the call numbers r1 and r2, or respectively r3 in table 31, as the identification of the subscribers to whom the message is supposed to be transmitted, i.e. the addressee A. It is preferable to have this conversion of the typed-in values into the corresponding call numbers carried out directly by the receiving module because any possible discrepancies, for example missing entries, can be corrected by the transmitting subscriber 21. This second variant

has the advantage over the first variant that the transmitting subscriber 21 has to type in fewer digits.

In a third preferred variant, the transmitting subscriber 21 determines the addressees by transmitting the names thereof and/or the name of a group of subscribers by means of spoken language to the message exchange 1, where they are received by the receiving module 3. In a similar way as in the second variant, the receiving module 3 compares the received names and/or names of groups with the entries in the above-mentioned personal list 41 of the transmitting subscriber 21, and determines the call numbers belonging thereto. In addition, the services of a speech recognition module 8 of the message exchange 1 can be used thereby, which are based on commercially available software programs and which convert the received spoken names into text that is compared with the alphanumerically stored names and/or group names of the personal list 41. As an alternative, the receiving module 3 can have at its disposal programmed comparison algorithms by means of which the received spoken names are compared with the names or group names of the personal list 41 which are stored as voice signals in this case. Preferable is that group names, for example the value of g1, are converted directly at this point in time into the corresponding subscribers associated thereto, for example into the values of the call numbers r1 and r2.

There are different possibilities for a subscriber 21-24 to administer his personal list by means of the services of an address module 4, the address module 4 being once again a software module, which is installed, for example, on the server of the message exchange and which has a memory area 41 assigned to it, which is also accessible to the receiving module 3. In a similar way as has been described for placing a message, a subscriber 21-24 can call the service number of the message exchange 1 – different service numbers can be thereby provided for placing a message and for administering personal address lists 41, for example, or the various functions can be selected under a joint service number by means of a voice-controlled menu. The address module 4 of the message exchange 1 guides the interested subscriber 21-24, by means of spoken instructions, through the administrative procedure for his personal list 41 of subscribers to whom he wishes to have messages transmitted. Thereby received by the interested subscriber 21-24, and stored in the list 41, shown schematically in Figure 1, depending upon the embodiment variant, are the names N and/or call numbers R of subscribers as well as groups of subscribers, which consist of a group name G and the associated participants N, R. In different variants, the

values are typed in by the interested participant 21-24 by means of the keys of his terminal, or are transmitted by spoken language. Values which are transmitted by spoken language, for example the name of a participant or of a group of participants, can be stored as voice signals by the address module 4, or
 5 converted by means of the above-mentioned service of the voice recognition module 8 and stored as alphanumerical data.

In an additional or alternative variant, a subscriber 21-24 can administer his personal list by means of Internet services of the address module 4 to which he has access via the Internet (not shown). In this case, at least certain services of
 10 the address module 4 are available as programmed functions via a web server. The advantage of administration of the personal lists by means of Internet services is that an easy-to-use graphic user interface is thereby offered to the interested subscribers that is suitable for the input of alphanumerical information and in particular for an efficient administration of the above-mentioned groups.

As is indicated in Figure 1, other information can also be stored in the lists
 15 41, in addition to the subscriber identifications, for example access rights by means of which writing and/or reading access to an entry in a personal list, or access to an entire personal list, can be permitted or respectively blocked for other subscribers, for example all subscribers who are contained in this list or only
 20 certain selected subscribers. These access rights can also be administered, for example, by means of services of the address module 4, in a similar way as described above.

In the message exchange 1, a message M, which was stored in the table
 31 together with the identification S of the transmitting subscriber 21 and the
 25 identification A of one or more subscribers, is transmitted by a transmission module 5 to the addressee or addressees. The transmission module 5 is once again a software module, i.e. a computer program, which is installed on the server of the message exchange and which has access to at least one tariff table 9, which is filed, for example, on one or more hard disk memories located on the
 30 server of the message exchange 1 or in a drive connected to this server. The point in time of the transmission of a message is determined, for example, by the transmission module 5 taking into consideration the above-mentioned data and/or time indications as well as the tariff levels stored in the tariff table 9. In addition, or as an alternative, the point in time of the transmission can also be made
 35 dependent upon the load on the public switched telephone network 2, which *<information>* is supplied to the transmission module 5 by a module 6 for determination of the traffic load. The module 6 can be designed by one skilled in

the art in such a way that it determines the current load on the public switched telephone network 2 or in such a way that it has this load stored in a table 61 as a statistical value captured from an external process.

Shown simplified in a flow chart in Figure 2 is the transmission of a
 5 message to an addressee with reference to an example. In step 201, with the aid of conventional communications services, the transmission module 5 of the message exchange 1 calls the call number of a subscriber 22-24, which is filed in the table 31, as described above, for the respective message.

In addition, or as an alternative, the transmission module 5 can also have
 10 access to the Internet, so that, starting at a certain tariff level, for example, e.g. for long-distance calls over great distances, the call to the subscriber can be established via the Internet, and the message transmitted via the Internet, a corresponding gateway between the public switched telephone network and the Internet being used in each case.

15 In step 202, the transmission module 5 determines whether the connection to the terminal of the called subscriber is busy (occupied). If this is the case, the transmission module 5 continues in step 213, where the call is terminated. As we shall describe later on, a corresponding status is then set and a new attempt to transmit the message is made at a later point in time. In an alternative variant, the
 20 transmission module 5 waits in step 203, as indicated in broken lines in Figure 2, for example for a predetermined time, and then calls the respective subscriber again in step 201.

When the connection to the called subscriber is not busy (unoccupied), the transmission module 5 transmits, in step 204, a spoken announcement of the
 25 message, and asks the called subscriber whether he would like to hear the announced message. The corresponding text reads for example as follows: "This is a message from Mr. X. The message will be played to you in three seconds. Please answer with yes or no as to whether you would like to hear the message."

In step 205, after a predefined time span, the transmission module 5
 30 checks the answer of the called subscriber to the question posed in step 204, for example with the aid of the above-mentioned speech recognition module 8. If the answer is no, the transmission module continues in step 213, where the call is terminated. Otherwise, if the answer is yes, or if no answer is given, for example because the call was received by an automatic telephone answering machine, the
 35 respective message M stored in table 31 is played to the called subscriber in step 206.

After the message has been played, the transmission module 5 transmits in step 207 the spoken question as to whether the called subscriber would like to hear the message again, for example:

"Please answer with yes or no as to whether you would like to hear the
5 message again."

In step 208, the transmission module 5 checks the answer of the called subscriber, after a predefined time span, to the question posed in step 210 <sic. 207>, for example, as mentioned above, with the aid of the speech recognition module 8. If the answer is yes, the transmission module 5 continues in step 206,
10 and repeats the playing of the message. If the answer to the question in step 207 is no, the transmission module 5 continues in step 210. If no answer was given to the question in step 207, for example because the call was received by an automatic telephone answering machine, it is checked in step 209 whether the respective message has already been played again to the called subscriber, for
15 example by means of a flag provided for this purpose. If the message has already been played again to the called subscriber, the transmission module 5 continues in step 213, where the call is terminated. Otherwise, if the message has not yet been played again to the respective subscriber, the transmission module 5 sets the above-mentioned flag, and continues in step 206, where the playing of the
20 message is repeated.

In step 210, the transmission module 5 transmits the spoken question to the called subscriber as to whether he would like to give a reply to the subscriber who transmitted the message, for example:

"Please answer with yes or no as to whether you would like to give a reply."
25 In step 211, the transmission module 5 checks, after a predefined time span, the answer of the called subscriber to the question posed in step 210, for example, as mentioned above, with the aid of the speech recognition module 8. If the answer is no, or if no answer is given, the transmission module 5 continues in step 213, where the call is terminated. Otherwise, if the answer is yes, the
30 transmission module 5 activates, in step 212, the reply module, a software module, which receives a spoken reply from the called subscriber and stores it in a memory area accessible to it. The memory area is a table 72, for example, which is filed for instance on one or more hard disk memories located on the same server or in a drive connected to this server. In addition, the reply module 7
35 also sees to it that the stored answer is linked to the respective message and the

respective called subscriber, for example in that a respective indicator is entered in the table 31 for the respective message M.

In an embodiment variant, the reply module 7 can be designed in such a way that it offers the called subscriber the option, for example by means of spoken
 5 guidance, of transmitting a message, instead of a simple reply, to the transmitting subscriber, and optionally to other subscribers, for example to all or to selected subscribers to whom the original message was addressed, or also to other subscribers. For reasons of confidentiality, this embodiment variant can be implemented in such a way that this option can be blocked by the subscriber who
 10 placed the original message, for example if this subscriber does not want to let the called subscriber know to whom the message was addressed, or the access to this option can be controlled by means of the above-mentioned access rights to the entries in a personal list 41. In principle, the reply module 7 can be achieved in such a way that it offers the called subscriber the functionality of the receiving
 15 module 3, as described above, in order to make it thereby possible for him to place a message himself in reply to the received message and to have it transmitted by the message exchange 1 to a group of subscribers.

As was already mentioned above, the transmission module 5 terminates the call to the called subscriber in step 213. Then, in step 214, the status
 20 information T corresponding to the outcome of the call, that means corresponding to the outcome of the transmission of the message M to the called subscriber, is entered in the table 31. The status information for a message to a particular subscriber contains, for example, information about the success or failure of the transmission of this message, about the number of transmission attempts, about
 25 the point in time of the last transmission, or about the availability of a reply from the called subscriber. As already mentioned, for messages which could not be successfully transmitted, another attempt is made at a later point in time, it being possible, for example, to limit the number of attempts to be repeated to a predefined number.

30 This status information as well as the received and stored replies can be made accessible to the respective transmitting subscriber, for example by means of a query module 10. The query module 10 is again a software module, which is installed, for example, on the server of the message exchange, and which has access to the information in the table 31 and to the stored replies in the table 72.
 35 A subscriber 21-24 can call the service number of the message exchange 1, for example, as already described above, it being possible, for example, to provide for different service numbers for placing a message, for administering personal

address lists 41, or for asking for status information and replies, or it being possible to select the different functions under a joint service number by means of a voice-controlled menu. The query module 10 of the message exchange 1 guides the interested subscriber 21-24, by means of spoken instructions, through the
 5 querying procedure for information about his placed messages. Similar to the way described for the administration of the personal lists, this query service could also be offered by means of Internet services via a web server.

The message exchange 1 described, as well as the method of receiving, storing and transmitting messages in telephone networks, is *<sic. are>* suitable for
 10 the most varied applications. For example, groups of people, e.g. a school class, a sports team, or in a completely general way an interest group, can thereby be informed about an upcoming event or a change in schedule, for example, without the caller having to carry out each individual call – and in particular repeated calls, owing to lines which are busy (occupied)– by himself manually. With the
 15 described invention, it is also possible to carry out automatic polls in that a predefined group of called persons is asked questions which they can answer. It is of course also practical to have a message transmitted to individual persons who are hard to reach, without having to obtain and install a message device of one's own for this purpose.

It should also be mentioned here that, for certain applications, it can
 20 definitely be preferable for subscribers to be able to register themselves in public groups intended therefor; depending upon the application, such a public group can be accessible free or by payment only. The access to a public group can take place, for example, via Internet services intended therefor. All subscribers, who
 25 have registered in such a public group, will then receive a call with a message to which they can also reply, if need be.

Although this has not been mentioned so far, it is definitely also possible with the present invention to transmit fax messages and/or other data instead of, or in addition to, the spoken messages.

30 An operator of a message exchange can offer interested subscribers the services described above, for example at a flat rate tariff, or he can bill them according to the number of transmitted messages. Moreover it can also be advantageous to bill for the memory area used by the respective subscriber for storing his personal subscriber list and/or the placed messages.

35 In addition to the sale of complete message exchanges to interested operators, it can also be interesting to market the described software programs

separately, for example by means of data carriers with programs stored thereon for control of computers, e.g. commercially available servers, according to the method described.

to be used for the purpose of

AMENDED CLAIMS

[Received at the International Bureau on November 17, 1999; original claims 1-26 replaced by amended, new claims 1-18 (5 pages)]

1. A message exchange (1) for receiving and storing spoken messages
 5 and for transmitting these messages to one or more subscribers (21-24), to whom the messages are addressed, in the public switched telephone network (2), with which the message exchange (1) is connected, wherein

it comprises an address module (4) in order to store a plurality of lists (41) with subscriber identifications (N, R), the said lists (41) being assigned in
 10 each case to at least one subscriber (21-24) in the said telephone network (2), and in the said address module (4) at least certain subscriber identifications (n1, n2, r1, r2) in a said list (41) of a subscriber being combined into a group (g1),

it comprises a receiving module (3) in order to receive said messages
 15 from subscribers (21-24) in the said telephone network (2) via this said telephone network (2) and store them in each case together with an identification (S) of the subscriber who has placed the message (M),

it comprises a speech recognition module (8), which makes it possible for a subscriber to determine by means of spoken language subscribers and/or
 20 groups of subscribers to whom or which a message is supposed to be addressed,

it comprises a transmission module (5) in order to transmit stored messages (M) by means of automatic call to the determined subscribers and/or groups of subscribers, and

25 it comprises a reply module (7) for receiving and storing replies of a subscriber to whom messages were transmitted.

2. The message exchange (1) according to the preceding claim, wherein the said speech recognition module (8) makes it possible for a subscriber to create and to administer the said lists (41) by means of spoken language.

30 3. The message exchange (1) according to one of the preceding claims,

AMENDED PAGE (ARTICLE 19)

wherein a said subscriber identification comprises the name (n1, n2, n3) of the respective subscriber.

4. The message exchange (1) according to one of the preceding claims, wherein a said subscriber identification comprises the call number (r1, r2, r3) of the respective subscriber.

5. The message exchange (1) according to one of the preceding claims, wherein at least certain of the said subscriber identifications (N, R, G) are stored as voice signals.

6. The message exchange (1) according to one of the preceding claims, wherein it comprises at least one tariff table (9), which makes it possible for the said transmission module (5) to transmit at least certain messages at times having economical tariffs.

7. The message exchange (1) according to one of the preceding claims, wherein it comprises a table (61) with statistical information on the traffic load in the said telephone network (2), which makes it possible for the said transmission module (5) to transmit at least certain messages at times of low traffic load.

8. The message exchange (1) according to one of the preceding claims, wherein the said reply module (7) can receive as reply, store and transmit to the addressed subscribers messages from a subscriber to whom messages were sent, which messages can be addressed to a group of subscribers.

9. The message exchange (1) according to one of the preceding claims, wherein a said list (41) also contains access rights.

10. A method of receiving and storing spoken messages and of transmitting these messages to one or more subscribers (21-24) in the public switched telephone network (2) wherein

a plurality of lists (41) with subscriber identifications (N, R), are stored in a message exchange (1) connected to the said telephone network (2), the lists (41) being assigned in each case to at least one subscriber (21-24) in the said

telephone network (2), and at least certain subscriber identifications (n1, n2, r1, r2) in a said list (41) of a subscriber being combined in a group (g1),

in the message exchange (1), messages of subscribers (21-24) in the public switched telephone network (2) are received via the said telephone
 5 network (2) and are stored in each case together with an identification of the subscriber (S), who has given the message (M),

subscribers address messages to subscribers and/or groups of subscribers by designating to the message exchange (1) the respective subscribers or groups of subscribers by means of spoken language,

10 a speech recognition module (8) in the message exchange (1) identifies in the said list (41) of the respective subscriber the said subscribers and/or groups of subscribers designated by the subscriber,

stored messages (M) are transmitted by the message exchange (1) by means of automatic call to the identified subscribers and/or groups of
 15 subscribers, and

replies of a subscriber, to whom messages were transmitted, are received and stored by the message exchange (1).

11. The method according to the preceding claim, wherein at least certain of the said subscriber identifications (N, R, G) are stored as voice
 20 signal.

12. The method according to one of the claims 10 to 11, wherein status information is stored concerning the transmission of messages to subscribers, and messages not successfully transmitted can be repeatedly transmitted.

13. The method according to one of the claims 10 to 12, wherein at least
 25 one tariff table (9) is monitored, and at least certain messages are transmitted to addressed subscribers at economical tariff times.

14. The method according to one of the claims 10 to 13, wherein statistical information on the traffic load in the said telephone network (2) is stored in a table (61), and at least certain messages are transmitted to the
 30 addressed subscribers at times of low traffic load.

15. The method according to one of the claims 10 to 14, wherein at least

AMENDED PAGE (ARTICLE 19)

certain messages are transmitted via the Internet.

16. The method according to one of the claims 10 to 15, wherein
messages from a subscriber to whom messages were sent are received as
reply, stored and transmitted to the addressed subscribers, which messages
5 can be addressed to a group of subscribers.

17. The method according to one of the claims 10 to 16, wherein the
said lists (41) are administered by means of spoken language by at least
certain subscribers.

18. A computer-readable data carrier which contains coded data which
10 represent a computer program, which program makes it possible to control a
message exchange (1) according to one of the claims 1 to 9 in such a way that
it carries out a method according to one of the claims 10 to 17.

15

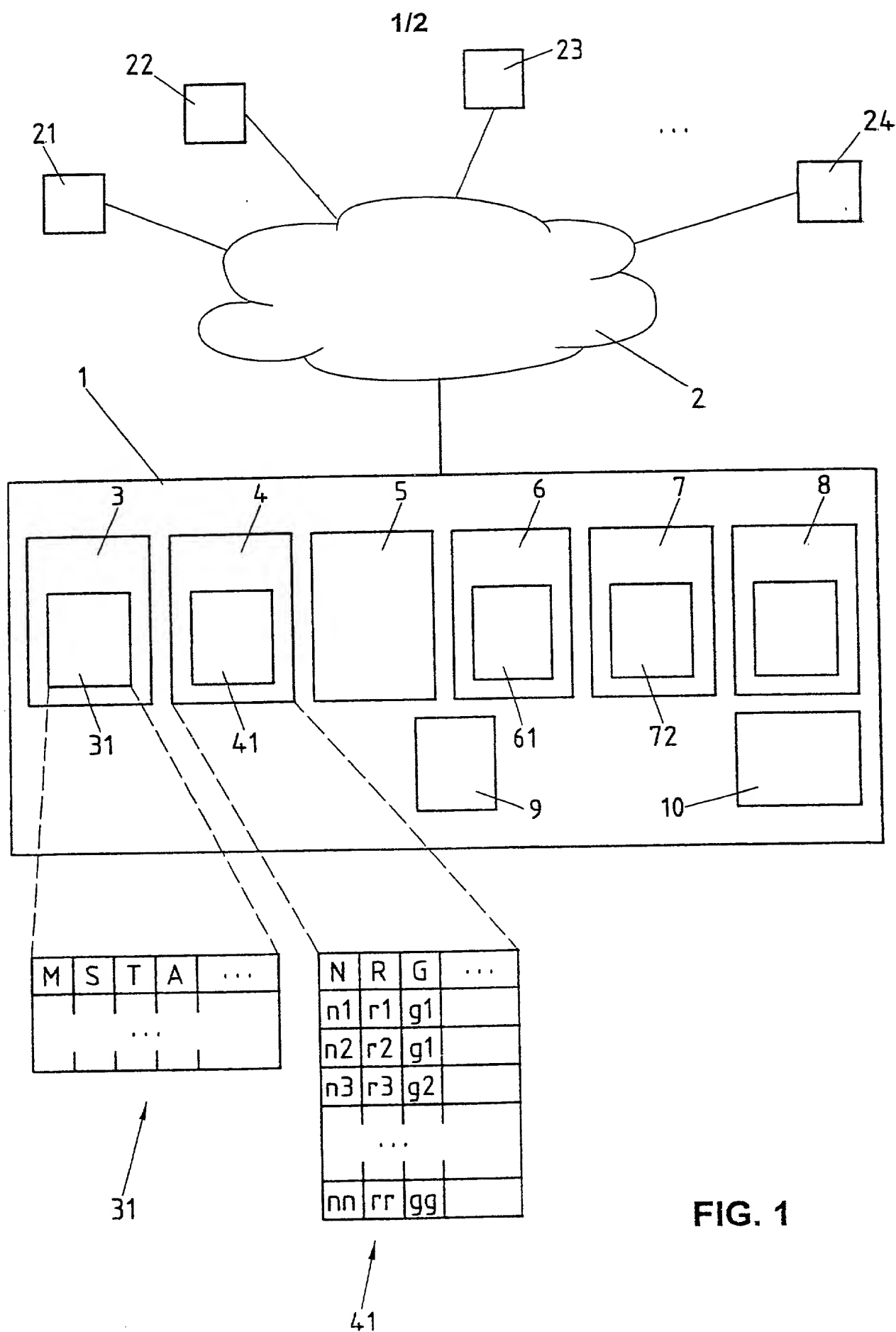
20

25

Abstract

Voice-controlled message exchange (1) and method for receiving spoken messages from a plurality of subscribers in the public switched telephone network (2) via this telephone network (2), for storing the received messages, together with an identification of the subscriber (S), who has transmitted the message (M), for transmission of these messages to one or more subscribers (21-24) or groups of subscribers in the public switched telephone network (2), and for accepting and storing replies from subscribers, to whom the messages were transmitted, whereby the subscribers not only give voice-controlled messages and replies, but can also draw up and administrate lists (41) with identifications of subscribers (N, R) and groups (G) of subscribers by voice control.

(Figure 1)



2/2

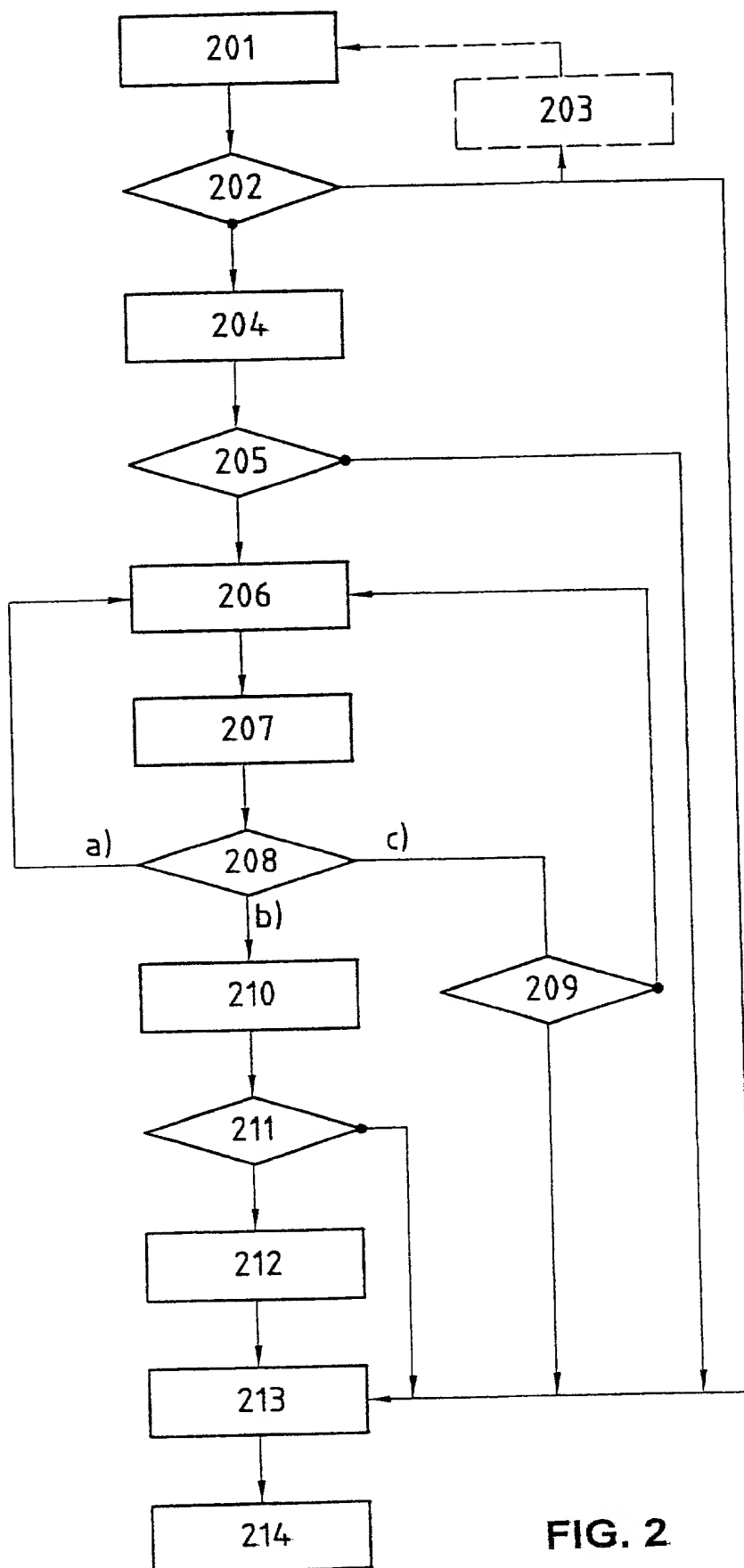


FIG. 2

FOR UTILITY/DESIGN
CIP/PCT NATIONAL/PLANT
ORIGINAL/SUBSTITUTE/SUPPLEMENTAL
DECLARATIONS

RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PM & S
FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED

Message Exchange and Method for Disseminating Messages in Telephone Networks
the specification of which (CHECK applicable BOX(ES))

X ☒ is attached hereto.
BOX(ES) ☐ was filed on _____ as U.S. Application No. _____
☒ was filed as PCT International Application No. PCT/CH 98 00407 on 22 September 1998
and (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S)		Date first Laid-open or Published	Date Patented or Granted	Priority Claimed
Number	Country	Day/MONTH/Year Filed		Yes No
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I hereby claim domestic priority benefit under 35 U.S.C. 119/120/365 of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S)		Status	Priority Claimed
Application No. (series code/serial no.)	Day/MONTH/Year Filed	pending, abandoned, patented	Yes No

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

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